President Joe Biden's Science and Technology Agenda

AIP Assembly
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President Biden's Science Advisor - Eric Lander

- Outstanding research credentials
- Expertise in biosciences – mathematician, geneticist
- Human Genome Project (Whitehead Institute)
- Administrative leadership experience (Broad Institute)
- Knowledge of White House – Co-chair PCAST (Obama)
- First science advisor (Dir. OSTP) to sit on Cabinet
- Willing to speak out !

Eric Lander's OSTP-PCAST Team

- Deputy Director for Science & Society - Alondra Nelson
- Deputy Director for Climate and Environment – Jane Lubchenco
- Deputy Director for National Security – Jason Matheny
- Chief of Staff Kei Koizumi
- Co-Chairs of PCAST Frances Arnold & Maria Zuber
- Assistant Directors and Staff

President Biden's List for Eric Lander

1. What can we learn from the pandemic about what *is* possible—or what *ought to be possible*—to address the widest range of needs related to our public health?

2. How can breakthroughs in science and technology create powerful new solutions to address climate change—propelling market-driven change, jump-starting economic growth, improving health, and growing jobs, especially in communities that have been left behind?

3. How can the United States ensure that it is the world leader in the technologies and industries of the future that will be critical to our economic prosperity and national security, especially in competition with China?

4. How can we guarantee that the fruits of science and technology are fully shared across America and among all Americans?

President Biden's List for Eric Lander

1. What can we learn from the pandemic about what *is* possible—or what *ought to be possible*—to address the widest range of needs related to our public health?

2. How c … utions to addre … conomic growt … have been left behin…

3. How c … gies and indust … national securi…

4. How c … ared across America and among all Americans?

President Biden's S&T agenda involves most federal agencies and white house councils, offices and czars:

pandemic – public health – climate change – economy - jobs – underserved communities – global competition – china – key technologies – future industries – all America – and others

Executive Office of the President

Executive Departments

NSF, NASA, EPA and other agencies

PRESIDENT "POTUS"

VICE PRESIDENT "VPOTUS"

POTUS chief of staff

Political advisors

VPOTUS chief of staff

Czars – climate etc.

National security council

Economic policy council

Office of science and technology policy

NSTC

PCAST

Domestic policy council

Council on environmental policy

Council of economic advisors

Office of management and budget

Office of trade representative

Policy making is a noisy business!

Lobbyists x,y,z

special Interests

BIG MONEY

consumers

MEDIA FACEBOOK

Lobbyists x,y.z

consumers

MEDIA CNN

special Interests

President & Vice President

Industry

special Interests

Congress

Religious Groups

MEDIA PRESS

consumers

environmental activists

WH Staff
WH Executive Offices
(OSTP, OMB, NSC …)

"Cabinet" (Department Secretaries)

House and Senate Committees & Subcommittees & Staff

MEDIA TALK RADIO

Gun rights

Lobbyists x,y,z

BIG MONEY

MEDIA FOX

special Interests

MEDIA MSNBC

BIG MONEY

Industry

environmental activists

Industry

AARP

Federal Departments & Independent Agen

consumers

scientific societies

Fossil Fuels

MEDIA TWITTER

MEDIA YOUTUBE

scientific societies

universities

Religious Groups

Nationalists

special Interests

Women's rights

Populists

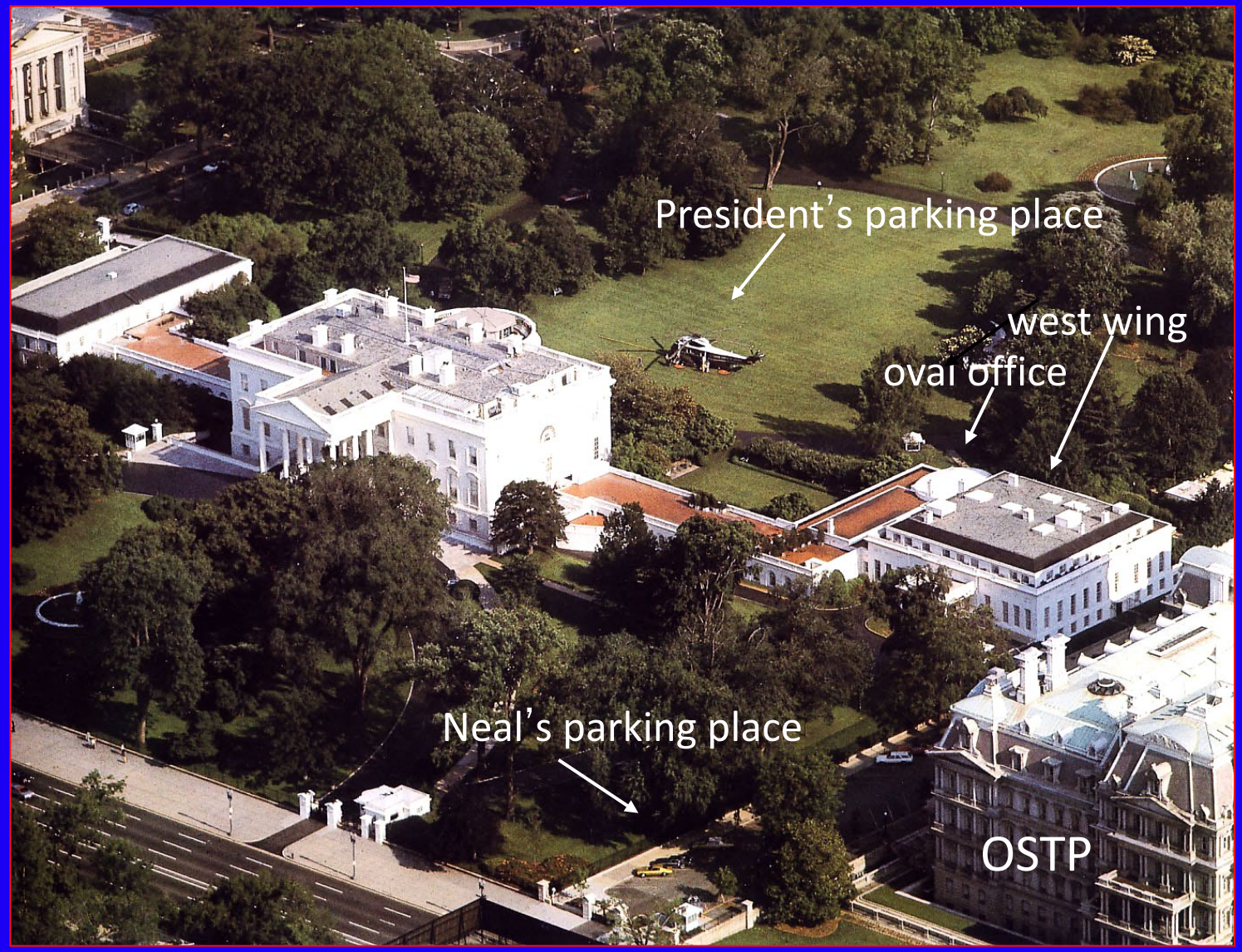
GLBTQ rights

Human rights

Suggestions for the Science Advisor

- Define the "S&T niche" in the president's agenda – and a "navigation" plan
- Start making friends – West Wing, Cabinet, agencies, (Congress)
- Develop specific interagency initiatives – with the NSTC and OMB
- Encourage PCAST to review and support initiatives and other strategies
- Influence OMB and agencies in planning annual agency budgets
- Cooperate with NSC and other policy councils
- Develop international partnerships in support of U.S. priorities
- Represent the president on S&T matters – Congress – public – international

It's important to be close to the West Wing and Oval Office – but not too close!



Reasons for Optimism – Policy Makers are Noticing

- Biden Administration's Priority on S&T
  - Elevation of OSTP Director to Cabinet
  - Ambitious agenda – challenges to Eric Lander
- Congress
  - Endless Frontier Act (EFA) – NSF & NIST
  - RISE and other bills
- Advocacy - Two Examples
  - S&T Action Plan – recommendations for federal R&D
  - Salon Group – recommendations for Congress – EFA
- A time of crisis – a "pandemic moment" – and "China moment" !

The Endless Frontier Act

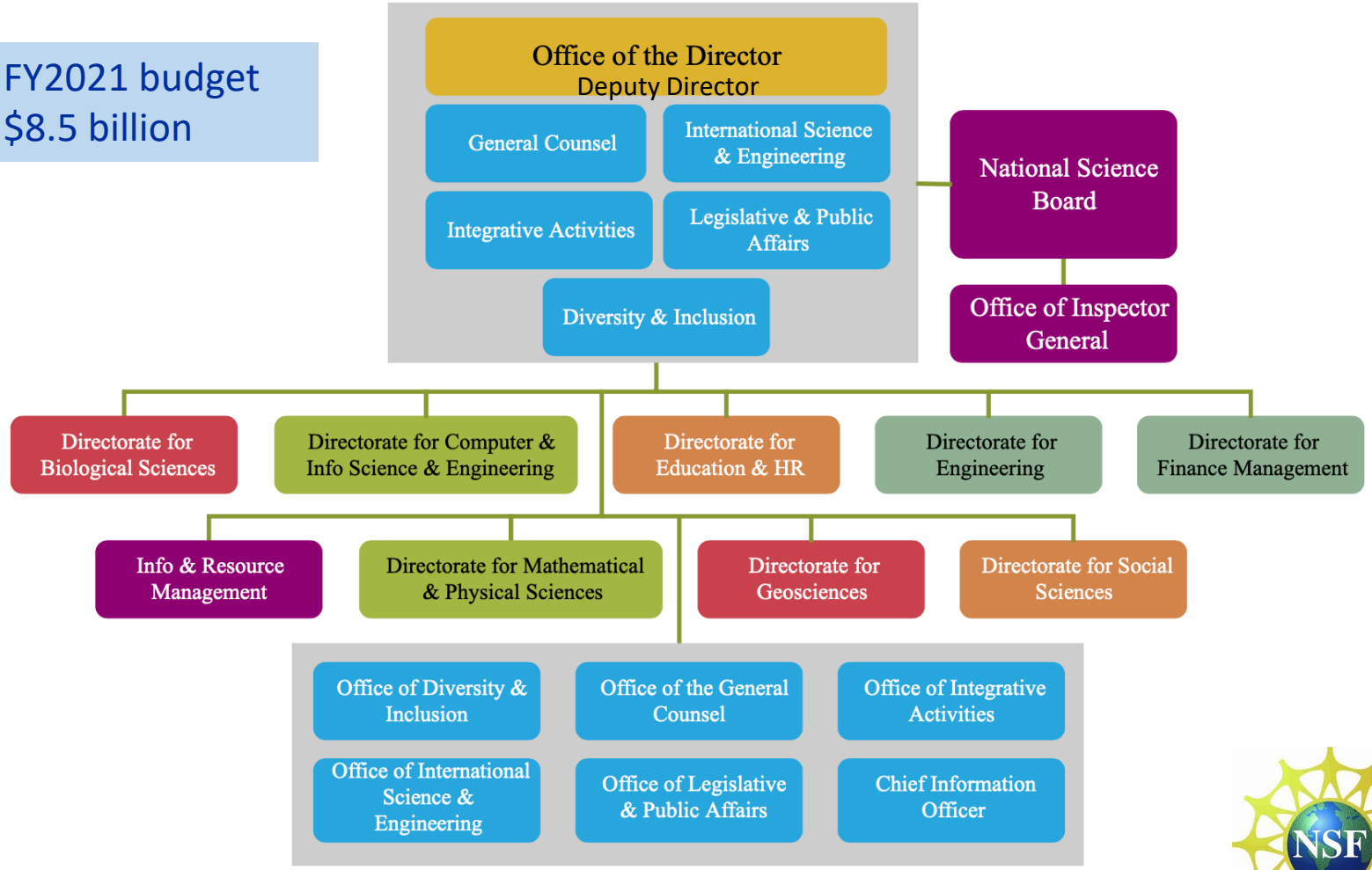
(Bipartisan & Bicameral)

Majority Leader Chuck Schumer (D-NY), Senator Todd Young (R-IN)
Congressmen Ro Khanna (D-CA) and Mike Gallagher (R-WI)

- New Name – National Science and Technology Foundation - NSTF
- New Technology Directorate – “new DARPA-like authorities”
- New Deputy Director for Technology (Senate confirmed)
- New Funding of $ 100 Billion over 5 years
- New Advisory Board on Technology w/ Congress involved
- New scholarships, fellowships, traineeships
- New initiatives - ”lab to market” centers and workforce

Current NSF Organization

FY2021 budget
$8.5 billion



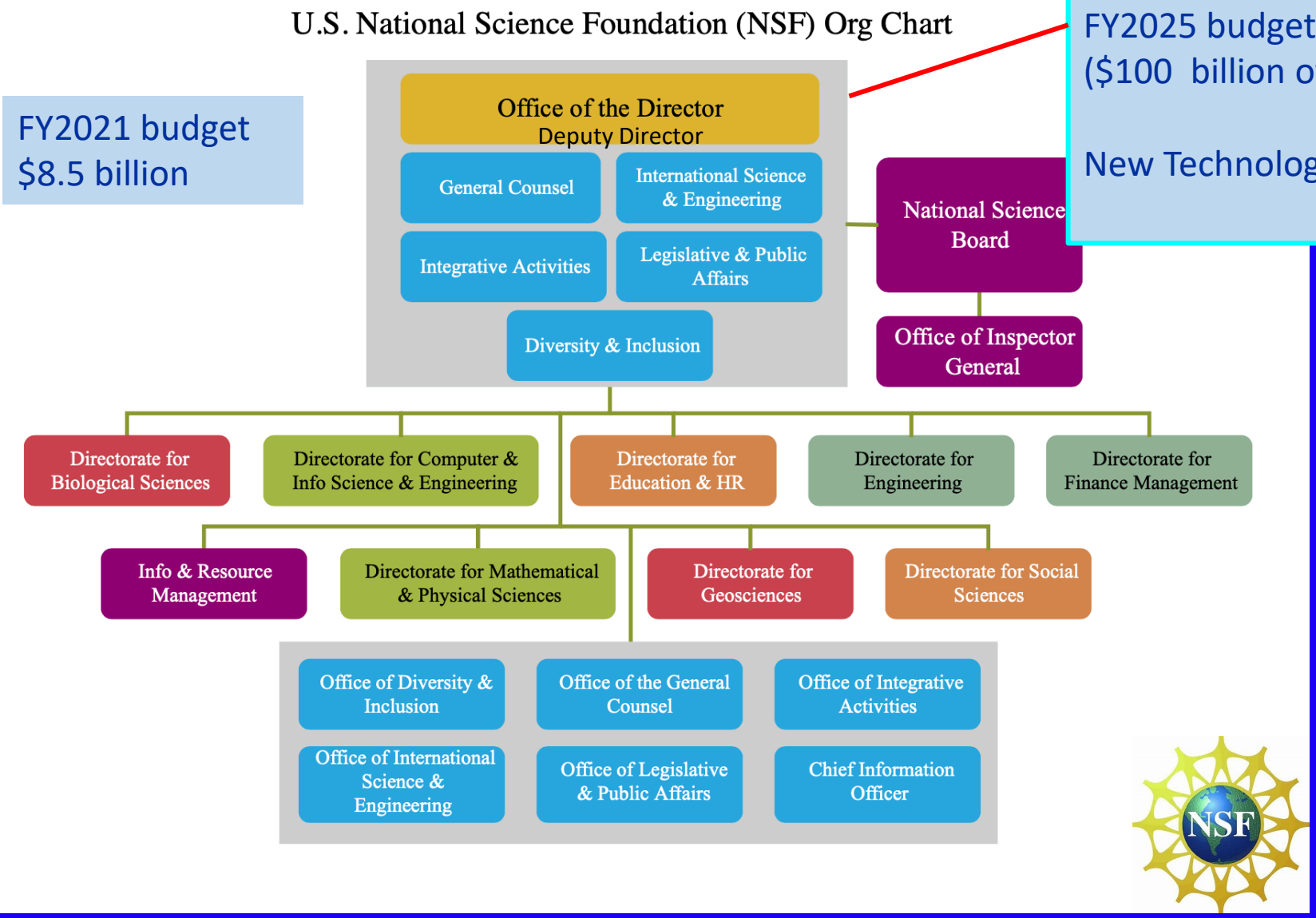
EFA Proposed NSF Organization

New Directorate of Technology
(Deputy Director for Technology)

FY2025 budget $35 billion
($100 billion over 5 years)

New Technology Advisory Board

FY2021 budget
$8.5 billion



The Endless Frontier Act

Salon Group Paper: "Should the Endless Frontier of Science be Expanded?"

By David Baltimore, Bob Conn, Bill Press, Tom Rosenbaum, David Spergel, Shirley Tilghman and Harold Varmus (published by 'Science' on-line)

Recommendations

- Supports the objectives and several elements of the bill
- Recommends against the name change
- Recommends against a new Deputy Director for Technology
- Recommends against a new Advisory Board on Technology
- Recommends additional protection of current directorates budgets

Conclusions

"The recommendations we have made here are significant, but still minor in comparison with the benefits that the proposed Endless Frontier Act would confer on the nation's research enterprise."

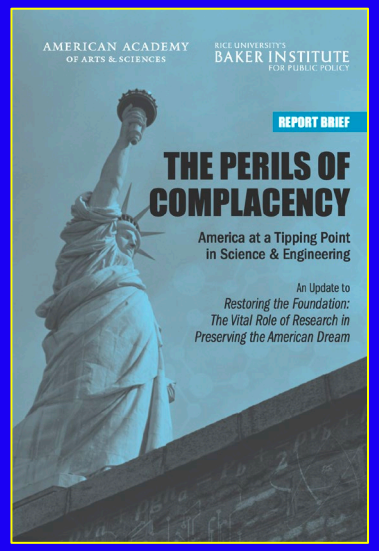
The Endless Frontier Act

Letter from former NSF Directors and NSB Chairs:

"We applaud efforts to strengthen American competitiveness in science, technology and innovation by significantly increasing support for research through the bipartisan, bicameral Endless Frontier Act…we are supportive of the spirit of this legislation. We understand that conversations are ongoing and will continue to address important details in this legislation, so we do not wish to elaborate on those details here. We are confident that NSF can meet the goals of this proposed legislation and deliver the expected outcomes if given sufficient resources and discretion in implementation…"

Former NSF Directors	Former NSB Chairs
France Cordova (2014 – 2020)	Diane Souvaine (2018 – 2020)
Subra Suresh (2010 – 2013	Maria Zuber (2016 – 2018)
Arden Bement (2004 – 2010)	Dan Arvizu (2012 – 2016)
Rita Colwell (1998 – 2004)	Ray Bowen (2010 – 2012)
Neal Lane (1993 – 1998)	Warren Washington (2002 – 2006)
Walter Massey (1991 – 1993)	Richard Zare (1996 – 1998)
Richard Atkinson (1976 – 1980)	James Duderstadt (1991 – 1994)

[Our letter referenced a new report: "The Perils of Complacency: America at a Tipping Point in Science and Engineering" American Academy of Arts and Sciences and Rice University's Baker Institute for Public Policy"]



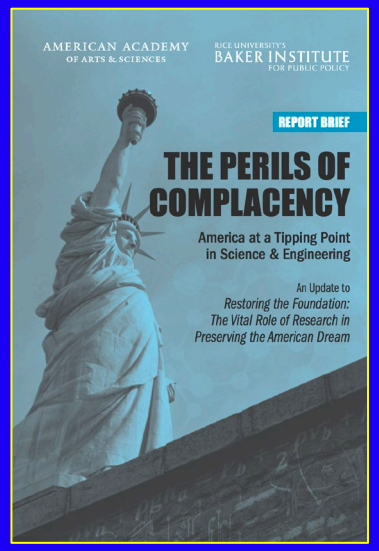
The Perils of Complacency
America at a Tipping Point in Science and Engineering

American Academy of Arts and Sciences & Rice University's Baker Institute for Public Policy

Co-chairs: Norm Augustine & Neal Lane

ISSUES

- U.S. slipping back in global innovation indicators
- Erratic and eroding federal research support
- U.S. industry focusing on short-term gains, avoiding investments in basic research
- Poor quality of STEM education for large numbers of Americans
- Rapid rise of Asia, especially China, in S&T and Innovation
- Growing deficits and national debt – looming political pushback



The Perils of Complacency
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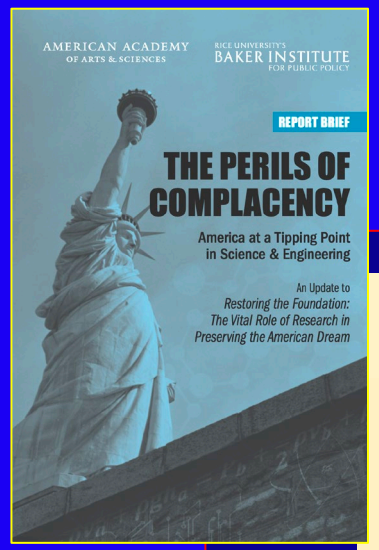
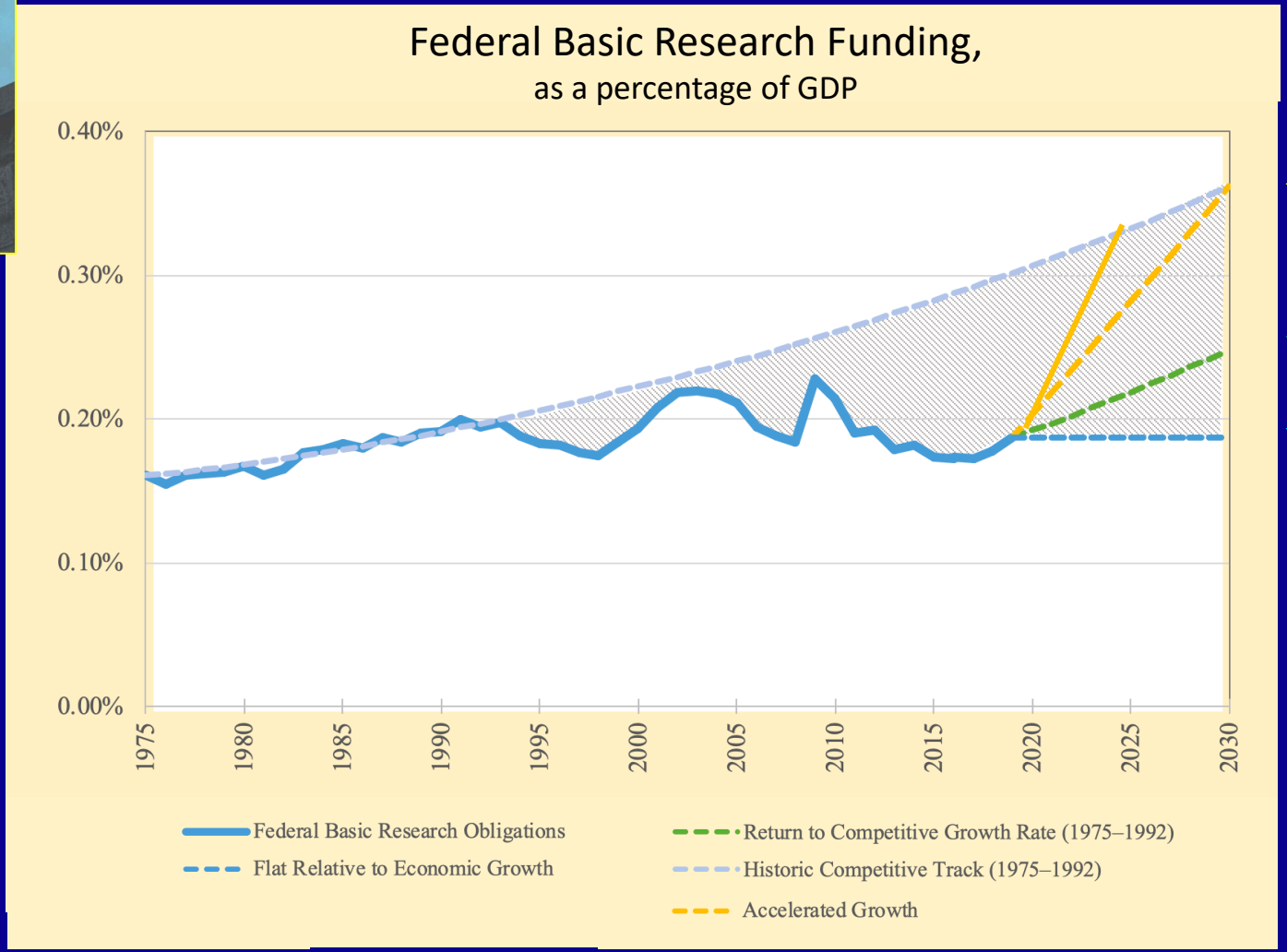
RECOMMENDATIONS

- R&D – boost federal research funding by at least 50%
- Budget process – rolling 5-year plan, 2-yr funding cycle and capital budget
- Rules & regulations – review, replace or remove
- Workforce – grow STEM numbers and skills – US & foreign born
- Education – transform quality of pre-K12 education & access for all Americans
- GUI partnership – change laws & regulations and offer incentives
- Universities –restore State funding – Congress repeal tax on endowment



Research Funding Recommendation



Get "back on track" (fast or slow)

Resume modest real growth

Business as usual

The Future?

Why are my grandkids smiling ?

Thank you !